

Remarks

As will be discussed below, considering that these amendments clearly place the application in condition for allowance and do not raise any new issues that would require new searching or consideration by the Examiner, entry of the above amendments is respectfully requested.

Status of All of the Claims

Below is the status of the claims in this application.

1. Claim(s) pending: 1-9.
2. Claim(s) canceled: none.
3. Claim(s) added: none.
4. Claims withdrawn from consideration but not canceled: none.

Independent Claim 1

In item 8 of the Office Action, independent claim 1 was “rejected under 35 U.S.C. 103(a) as being unpatentable over Mabbot . . . in view of Smith” Applicant submits, however, that the claimed invention is distinguishable over these references for reasons set forth hereafter.

The Present Invention

The present application, as defined in claim 1, relates to a method of providing a surface of a material with a marking, i.e. an “image” which is described in the second complete paragraph on page 3 of the specification. The method of claim 1 utilizes an “image sheet” which is comprised of three layers, namely:

- (a) a flexible layer of SMP;
- (b) an image key coat; and
- (c) an image bonded to the SMP layer (a) by the image key coat (b).

In the method defined by claim 1, the SMP layer is applied to the surface of the material being marked and will be retained thereon after the marking process. Advantages associated with the use of the SMP layer are summarized in the paragraph bridging pages 3 and 4 of the specification. In particular, the SMP polymer may take on the same surface texture as the material being marked so as faithfully to reproduce that surface texture (see second complete

paragraph on page 4). In essence, the properties of the SMP are such that when heated to its transition temperature (T_g) and applied to a textured surface, it is able to adopt the surface texture and retain that texture when cooled back to room temperature. The “image sheet” is therefore particularly useful for applying markings to surfaces such as leather and canvas and other flexible substrates (see also present claim 2). The function of the “image key coat” is to bond the image to the SMP layer so that a permanent marking can be achieved.

The Mabbott Reference

The Mabbott publication is also concerned with the application of images to surfaces. However, more particularly Mabbott is primarily concerned with image transfer sheets which comprise a layer of Shape Memory Polymer provided with an image **which is released** from the SMP layer during the marking process. Fig 3 of Mabbott describes various constructions of image transfer sheets in which the image is intended to be transferred from an SMP layer. Thus Fig 3(a) shows a construction in which the image 46 is “attached” to the SMP layer 44 such that the release properties of the latter may be used to transfer the image. Figs 3(b) and (c) each use an image release layer 48 interposed between the SMP layer 44 and image 46. In the specific embodiments of Mabbott described in the left hand column on page 3, with reference to Fig 4, there is reference to image transfer sheet 52 which is comprised of SMP provided with an image which during application of the marking is transferred from the SMP layer to leave the image in place on the object 70.

To the extent that the cited Mabbott publication relates to image transfer sheets which are such that the image is transferred from the SMP layer on to an article being marked there will be no “image key coat” (as required by the present invention) between the SMP layer and the image. In fact, the provision of such an image key coat would be counter-productive because it would hinder release of the image from the SMP layer.

There is a brief reference in Mabbott (against the main tenor of the disclosure) of bonding the SMP layer (with its attached image) to the surface being marked. For example, bonding of the SMP to a surface is mentioned in paragraph [0011], but this is in the context of an image bonded directly to the SMP, as the notion of a releasable carrier layer is not discussed until later (e.g., paragraph [0020]. There is a reference to a “Fixed Shape Decoration” in the Table below paragraph [0040], but again this follows a discussion where the image is fused directly to the

SMP (e.g., paragraphs [0030-0040]. The same is true as to the penultimate sentence of paragraph [0042] of the Mabbott '507 reference.

In none of the foregoing instances is there reference to an image key coat for bonding the image to the layer of Shape Memory Polymer. Indeed, it would not make sense as the only intermediate layer contemplated by the Mabbott reference is a releasable carrier layer which is used when the SMP is not to be bonded to a surface. Where the SMP is not being bonded to a surface, the releasable carrier layer may or may not be used. But when the SMP is being bonded to a surface, the use of a “releasable” layer does not make sense and is not suggested in the Mabbott reference.

Discussion

In paragraph 8 of the Office Action, the Examiner has assumed that Mabbott discloses an image sheet comprised of (i) a flexible layer of a Shape Memory Polymer, and (ii) an image bonded to said layer **by means of an image key coat (laminating)** (emphasis added). However there is no such disclosure in Mabbott. The “only” disclosure in Mabbott relating to the production of an image sheet is the procedure described with reference to Fig 2 (see paragraph [0033]), in which dry toner is fused onto a sheet release material 22, which is understood in the context of the Fig 2 disclosure to be the SMP film. There is no intermediate image key coat. Nor is there any other disclosure in Mabbott as to the production of an “image sheet” in which there is an image key coat between the image and the SMP layer.

In summary, Mabbott is primarily concerned with the transfer of images **from** an SMP layer, in which case an “image key coat layer” would not be employed. To the extent that Mabbott contemplates bonding an image sheet (including SMP layer) to a substrate by means of an adhesive, there is no disclosure or suggestion of the use of an image key coat for bonding the image to the SMP layer.

Conclusion

It should be understood that the above remarks are not intended to provide an exhaustive basis for patentability or concede the basis for the rejections in the Office Action, but are simply provided to overcome the rejections made in the Office Action in the most expedient fashion.

REPLY UNDER 37 CFR 1.116
EXPEDITED PROCEDURE
TECHNOLOGY CENTER 2853

In view of the above amendments and remarks, it is submitted that the present application is now in condition for allowance, and the Examiner is requested to pass the case to issue. If the Examiner should have any comments or suggestions to help speed the prosecution of this application, the Examiner is requested to contact the undersigned representative by telephone.

Respectfully submitted,

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